REMARKS/ARGUMENTS

Applicant thanks the Examiner for the allowability of claims 28 and 40.

The Examiner rejects claim 1 under 35 U.S.C. Section 102(e) as being anticipated by U.S. 6,601,031 to O'Brien; claims 2-3, 5-6, and 25 under 35 U.S.C. Section 103(a) as being unpatentable over O'Brien in view of U.S. 5,479,490 to Nakashima; claims 7, 9, and 17-18 under Section 103(a) as being unpatentable over O'Brien in view of U.S. 6,389,398 to Lustgarten; claims 8, 10-16, and 19-24 under Section 103(a) as being unpatentable over O'Brien in view of Lustgarten and further in view of Nakashima; claim 26 under Section 103(a) as being unpatentable over O'Brien in view of Nakashima in further view of U.S. 5,802,526 to Fawcett et al.; claims 27 and 41 under Section 103(a) as being unpatentable over O'Brien in view of Lustgarten in further view of McAllister; claims 29-33, 35-37, and 42 under Section 103(a) as being unpatentable over McAllister in view of O'Brien; and claims 34 and 38-39 under Section 103(a) as being unpatentable over McAllister in view of O'Brien and in further view of Nakashima.

Applicant respectfully traverses the Examiner's rejections for at least the reasons stated below.

Rejection of Independent Claims 1, 7, and 17

The cited references fail to teach or suggest at least the following italicized features in independent claims 1, 7, and 17:

> 1. An interactive voice response system for a telecommunications system, comprising:
>
> an adjunct processor that outputs an output data stream to a user; and
>
> a speech gateway enabling system comprising:
>
> a speech recognition engine operable to identify words in an input voice stream received from the user on a first communication path extending between the user and the speech gateway enabling system and
>
> a speech gateway controller operable (a) *to transfer at least a portion of the input voice stream, received from the user, from the first communication path to a second communication path extending between the speech gateway enabling system to the adjunct processor* and (b) to transfer the at least a portion of the input voice stream from the first communication path to the speech recognition engine for processing.

> 7. A method of providing interactive voice response capability in a telecommunications system, comprising:

(a) directing to a speech recognition engine at least a portion of an input voice stream received from a user on a first communication path extending between the user and a first adjunct processor;

(b) detecting, with the speech recognition engine, at least some of the words in the at least a portion of the input voice stream;

(c) *transferring the input voice stream from the first communication path to a second communication path extending between the first adjunct processor and a second adjunct processor*;

(d) comparing at least some of the detected words with a grammar, the grammar correlating a plurality of words with a corresponding plurality of command codes, to identify corresponding command codes for each of the at least some of the detected words; and

(e) transmitting a command signal corresponding to at least one identified command code to the second adjunct processor on the second communication path.

17. A system of providing interactive voice response capability in a telecommunications system, comprising:

first and second adjunct processors;

a speech recognition engine that detects at least some words in an input voice stream received from a user on a first communication path extending between the user and the first adjunct processor;

comparing means for comparing at least some of the detected words with a grammar, the grammar correlating a plurality of words with a corresponding plurality of DTMF codes, to identify corresponding DTMF codes for each of the at least some of the detected words;

directing means for directing to the speech recognition engine at least a portion of the input voice stream received from the user on the first communication path;

transferring means for transferring the at least a portion of the input voice stream received from the first communication path to a second communication path extending between the first adjunct processor and the second adjunct processor; and

transmitting means for transmitting a DTMF signal corresponding to at least one identified DTMF code on the second communication path.

O'Brien

The primary reference relied upon by the Examiner, namely O'Brien, is directed to the same problem as the present invention, namely providing user speech control to a DTMF-controlled adjunct processor. O'Brien accomplishes this capability by providing a speech recognition system (SRS). When a subscriber calls the voice mail system (VMS), the subscriber gets connected to the SRS. The SRS automatically calls the VMS, thereby forming a hairpin connection. The SRS listens to the subscriber's line for speech or DTMF digits. When recognized, the SRS outputs to the VMS a DTMF equivalent response to the speech or DTMF received from the subscriber's line.

O'Brien, however, fails to transfer the input voice stream from the first to the second communication path to permit the user to record greetings and other voice prompts. As can be seen from Figure 3, the input voice stream received from the user is transferred to the ASR/DTMF detector and the DTMF signals corresponding to the detected words are played by the application control on the second communication path extending from the speech recognition system 40 to the voice mail system 5. Figure 3 and the text of O'Brien do not disclose transferring the input voice stream itself from the first communication path extending from the user to the system 40 to the second communication path.

Nor is this modification of O'Brien obvious. Regarding this modification, O'Brien states:

> These examples provide a simple explanation, *but the real application would be more complex*. The SRS 40 wold need to track the state of VMS 5 and its call flow, therefore, it would need to be aware of the different VMSs and which one it was connected to. It would need to be able to play prompts to the subscriber when the subscriber needed help, *connect the voice path through to the VMS 5 when the subscriber was recording a greeting,* etc.

(Col. 3, line 66 to col. 4, line 6.) In other words, O'Brien appears not to have arrived at the solution of the present invention because the solution is not obvious to one of ordinary skill in the art.

The Examiner cites column 3, lines 35-47, of O'Brien for the teaching of the feature italicized above. This text does not teach this feature. It only teaches creating the communication paths shown in Figure 3, which does not include the transfer of the input voice stream as noted previously.

In an interview on August 3, 2004, the Examiner indicated that the above-quoted language in O'Brien indicates that the O'Brien architecture inherently can provide the functionality of the present invention. The Examiner stated that the above paragraph clearly recognized the need for the subscriber not only to access voice mail but also to configure the voice mail system or adjunct processor, such as recording a greeting. While O'Brien may have recognized the need for the user to remotely configure the system, O'Brien, *by its own admission*, does not provide a solution to this need. O'Brien's statement that the solution would be "more complex" indicates that the solution of the present invention is far from obvious to one of ordinary skill in the art. Simply put, O'Brien provides no motivation or suggestion to one of ordinary skill in the art to transfer a received portion

of the incoming voice stream not only to the speech recognition engine but also directly to the adjunct processor or voice messaging system.

This deficiency of O'Brien is not overcome by the other cited references.

Rejection of Independent Claim 29

The cited references fail to teach or suggest at least the following italicized features in independent claim 29:

> 29. A method of providing interactive voice response capability in a telecommunications system, comprising:
>
> (a) directing to a speech recognition engine at least a portion of an output data stream received from a second adjunct processor on a second communication path extending between the second adjunct processor and a first adjunct processor;
>
> (b) detecting, with the speech recognition engine, at least some of the words in the at least a portion of the output data stream received from the second adjunct processor;
>
> (c) *transferring the at least a portion of an output data stream received from the second adjunct processor to a first communication path extending between the user and the first adjunct processor*;
>
> (d) comparing at least some of the detected words with at least one command signal; and
>
> (e) *when the output data stream includes a command signal, terminating the directing step.*

McAllister et al.

McAllister et al. is directed to a voice response unit (VRU) that includes a library of content equivalent messages and prompts which may be substituted for one another to vary the presentation of messages provided to a user and thereby more closely simulate a human operator. Variations in verbal prompts are introduced by randomly selecting from among several content-equivalent messages or prompts in response to a pseudorandom number generated at the time each prompt or message is to be retrieved and used. Whenever a speech signal is received, the signal is processed to recognize a content thereof, and, in response to the content, one of the groups of content-equivalent messages is selected.

When an incoming call is received, the call is answered by the telephone line interface card 116. A pseudorandom number is generated and used to randomly select one of five content equivalent greetings to be played to the caller. If no speech is detected within a predetermined period

after the greeting has completed, the system will prompt the caller to speak a name of the party to be called. If speech is detected after the initial greeting or after the caller is prompted, the system attempts to identify phonemes from the speech signal of the calling party. If the name is found and no special handling is indicated, the name is played back to the caller to confirm that the correct directory listing has been identified by the system. The system then waits for a predetermined time before proceeding to initiate dialing. Contrary to the Examiner's assertion, if the caller speaks during the predetermined waiting time the caller's voice stream is forwarded to the speech recognition engine 114 for processing. If the system recognizes the caller speak an exception during this waiting time, a flag is used to indicate the appropriate alternative processing, such as voice mail. (Col. 6, lines 48-61.) The Examiner's statements that the directing step is terminated when a name is found in the system does not comport with the text of McAllister. (Office Action at page 18.)

The Examiner concedes that McAllister does not teach transferring the output stream from the second adjunct processor to the user on the first communication path. Although O'Brien discloses this step, it is not obvious to modify McAllister based on O'Brien to produce the present invention. According to the Examiner, the second adjunct processor in McAllister is the speech recognition client 108. It is not the voice mail system (not shown). In O'Brien, the Examiner asserts that the second adjunct processor is the voice mail system 5. There is no incentive to modify the architecture of McAllister to include the step of transferring an output stream to the user. In McAllister, not only is there no reason to make this modification but also the output of the speech recognition client 108 would be useless and incomprehensible to the user of the telephone 132 or 134. The modification would therefore create a useless architecture. O'Brien itself recognizes the problem of tracking the state of the voice mail system 5 but offers no suggestion to overcome this problem. The method of claim 29 can overcome this problem.

Accordingly, the pending claims are allowable.

The dependent claims provide additional reasons for allowance.

By way of example, claims 6, 9, 15, 18, 23, 25, 32, and 38 are directed to the use of a command signal or switch symbol. The symbol can be used to enable and disable on the one hand the transfer of the user voice stream to the speech recognition engine and second communication

path and on the other hand the second adjunct processor output stream to the speech recognition engine and first communication path.

The Examiner asserts that it is obvious to modify the system of O'Brien in light of Nakashima to use a switch symbol. Applicant disagrees.

O'Brien, as noted above, identifies tracking the state of the VMS 5 as a complex problem that needed to be addressed. (Col. 3, line 67 to col. 4, line 3.) O'Brien failed to provide a solution to this problem.

Nakashima is directed to a system that can be subjected to remote control by an input voice command. The system comprises an automatic answering circuit 5 (Figs. 2, 2A, and 2B) (which the Examiner analogizes to the "adjunct processor") having voice input 24, voice output 38, voice command request input 45, multi-frequency signal input 35, and start output 44, a speech network 9 (which the Examiner analogizes to the "speech gateway enabling system"), an internal line 8, connected to an external office line (not shown), a speech recognition circuit 41 with associated memory 144 (which the Examiner analogizes to the "speech recognition engine"), a control circuit 43 (which the Examiner analogizes to the "speech gateway controller"), a confirmation tone transmission circuit 25, and a dialer 33. As set forth at col. 9, line 24, through col. 10, line 9, a voice command request tone is transmitted from the voice output terminal 38 to the caller via the office line. After listening to the tone, the caller speaks a voice command signal. The voice command signal is directed to the speech recognition circuit 41. The corresponding command is identified by the circuit 41 and forwarded to the control circuit 43. The control circuit 43, drives the dialer 15 to output a multi-frequency signal corresponding to the command to the automatic answering circuit 5, which performs the requested command. A confirmation tone is also outputted by the confirmation tone transmission circuit to the caller indicating successful voice recognition of the command signal.

Contrary to the Examiner's position at page 6 of the Office Action respecting claim 6, Nakashima does not teach, in a first operational mode, transferring the output data stream from the

second communication path to the first communication path and, in a second operational mode, transferring the output stream from the second communication path to the speech recognition engine for processing (*see also* claims 15, 23, and 38-39). With reference to column 4, lines 41-61 (cited by the Examiner), the output of the terminal 19 is passed to the speech recognition circuit 41 when switch SW7 is on and switch SW6 is off but is not passed to the user on a first communication path (as required by claim 6) when switch SW7 is off and switch SW6 is on. Rather, the output is passed to an adjunct processor, namely automatic answering circuit 5.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: Douglas Swartz

Douglas W. Swartz
Registration No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700

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